

(non-U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|---------------|
| PATENT INFORMATION: | US 2003053960 | A1 | 20030320 |
| APPLICATION INFO.: | US 2002-223707 | A1 | 20020819 (10) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. WO 2001-NL133, filed on 19 Feb 2001, UNKNOWN | | |

| | NUMBER | DATE |
|--|--|----------|
| PRIORITY INFORMATION: | EP 2000-200550 | 20000217 |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | BANNER & WITCOFF, LTD., 28 STATE STREET, 28th FLOOR, BOSTON, MA, 02109 | |
| NUMBER OF CLAIMS: | 12 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 6 Drawing Page(s) | |
| LINE COUNT: | 776 | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | |

AB The invention relates to a **powder** formulation for administration by inhalation comprising an active substance and a pharmaceutically acceptable excipient, which composition has the form of a physical mixture and comprises from 5 to 25 wt. % of the excipient, and wherein the active substance has a **particle** size distribution of from 0.5 to 10 .mu.m, and wherein the excipient has a **particle** size distribution of from 15 to 500 .mu.m.

L4 ANSWER 8 OF 21 USPATFULL on STN
ACCESSION NUMBER: 2003:40663 USPATFULL
TITLE: Dry **powder** compositions having improved dispersivity
INVENTOR(S): Kuo, Mei-Chang, Palo Alto, CA, United States
Lechuga-Ballesteros, David, Santa Clara, CA, United States
PATENT ASSIGNEE(S): Inhale Therapeutic Systems, Inc., San Carlos, CA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|---------------------|-----------------------|------|--------------|
| PATENT INFORMATION: | US 6518239 | B1 | 20030211 |
| APPLICATION INFO.: | US 2000-548759 | | 20000413 (9) |

| | NUMBER | DATE |
|--|--|---------------|
| PRIORITY INFORMATION: | US 2000-178415P | 20000127 (60) |
| | US 2000-178383P | 20000127 (60) |
| | US 1999-172769P | 19991220 (60) |
| | US 1999-164236P | 19991108 (60) |
| | US 1999-162451P | 19991029 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | GRANTED | |
| PRIMARY EXAMINER: | Park, Hankyel T. | |
| LEGAL REPRESENTATIVE: | Evans, Susan T., Cagan, Felissa H. | |
| NUMBER OF CLAIMS: | 40 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 0 Drawing Figure(s); 0 Drawing Page(s) | |
| LINE COUNT: | 1632 | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | |

AB The present invention provides a highly dispersible formulation comprising an active agent and a dipeptide or tripeptide comprising at least two leucyl residues. The composition of the invention possesses superior aerosol properties and is thus preferred for aerosolized

administration to the lung. Also provided are a method for (i) increasing the dispersibility of an active-agent containing formulation for administration to the lung, and (ii) delivery of the composition to the lungs of a subject.

L4 ANSWER 9 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2003:33158 USPATFULL
TITLE: Pulmonary delivery in treating disorders of the central nervous system
INVENTOR(S): Bartus, Raymond T., Sudbury, MA, United States
Emerich, Dwaine F., Cranston, RI, United States
PATENT ASSIGNEE(S): Advanced Inhalation Research, Inc., Cambridge, MA, United States (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|--------------|
| PATENT INFORMATION: | US 6514482 | B1 | 20030204 |
| APPLICATION INFO.: | US 2000-665252 | | 20000919 (9) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | GRANTED | | |
| PRIMARY EXAMINER: | Dees, Jose' G. | | |
| ASSISTANT EXAMINER: | Haghighatian, M. | | |
| LEGAL REPRESENTATIVE: | Hamilton, Brook, Smith & Reynolds, P.C. | | |
| NUMBER OF CLAIMS: | 42 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 15 Drawing Figure(s); 9 Drawing Page(s) | | |
| LINE COUNT: | 1360 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method of pulmonary delivery of a medicament, for example a dopamine precursor or a dopamine agonist, which includes administering to the respiratory tract of a patient in need of rescue therapy **particles** comprising an effective amount of a medicament. The **particles** are delivered to the pulmonary system and are released into the blood stream and delivered to the medicament's site of action in a time sufficiently short to provide the rescue therapy. In addition to the medicament, the **particles** can include other materials such as, for example, phospholipids, amino acids, combinations thereof and others. Preferred **particles** have a tap density of less than about 0.4 g/cm.^{sup.3}.

L4 ANSWER 10 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2003:23278 USPATFULL
TITLE: Control of process humidity to produce large, porous **particles**
INVENTOR(S): Chen, Donghao, Lexington, MA, UNITED STATES
Batycky, Richard P., Newton, MA, UNITED STATES
Johnston, Lloyd, Belmont, MA, UNITED STATES
Mintzes, Jeffrey, Brighton, MA, UNITED STATES
PATENT ASSIGNEE(S): Advanced Inhalation Research, Inc., Cambridge, MA, UNITED STATES, 02139 (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 2003017113 | A1 | 20030123 |
| APPLICATION INFO.: | US 2001-837620 | A1 | 20010418 (9) |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133 | | |
| NUMBER OF CLAIMS: | 28 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 4 Drawing Page(s) | | |
| LINE COUNT: | 1000 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> +s l3 and (MMAD or (aerodynamic diameter))
 +S IS NOT A RECOGNIZED COMMAND
 The previous command name entered was not recognized by the system.
 For a list of commands available to you in the current file, enter
 "HELP COMMANDS" at an arrow prompt (=>).

=> s l3 and (MMAD or (aerodynamic diameter))
 L4 21 L3 AND (MMAD OR (AERODYNAMIC DIAMETER))

=> s l4 and flake
 => s l4 and flake
 L5 1 L4 AND FLAKE

=> s l4 and flake?
 L6 1 L4 AND FLAKE?

=> d l6 ibib abs
 'ABS' IS NOT A VALID FORMAT FOR FILE 'EUROPATFULL'

The following are valid formats:

MAX ----- AN, ED, UP, EW, FS, TI, TIDE, TIFR, IN, PA, PAN, AG, AGN,
 OS, SO, DT, LA, DS, PIT, PI, OD, AI, PRAI, RLI, NTE, REP,
 REN, IC (ICM, ICS), ICA, ICI, CM, FA, GIS, PGC, CLMN, AB,
 ABDE, ABFR, DETD, DETDDE, DETDFR, CLMDE, CLMFR
 MAXG ----- MAX plus GI
 MAX.OS ----- MAX, OS only
 MAXG.OS ----- MAX.OS plus GI
 MAX.PS ----- MAX, PS only
 IMAX ----- MAX, indented with text labels
 IMAX.OS ----- MAX, indented with text labels, OS only
 IMAX.PS ----- MAX, indented with text labels, PS only

ALL ----- AN, ED, UP, EW, FS, TI, IN, PA, PAN, AG, AGN, OS, SO, DT,
 LA, DS, PIT, PI, OD, AI, PRAI, RLI, NTE, REP, REN, IC (ICM,
 ICS), ICA, ICI, CM, FA, GIS, PGC, CLMN, AB*, DETD*, CLM*
 (* German or French text if English text is not available)
 ALLG ----- ALL plus GI
 ALL.OS ----- ALL, OS only
 ALLG.OS ----- ALL.OS plus GI
 ALL.PS ----- ALL, PS only
 IALL ----- ALL, indented with text labels
 IALLG ----- IALL plus GI
 IALL.OS ----- ALL, indented with text labels, OS only
 IALLG.OS ----- IALL.OS plus GI
 IALL.PS ----- ALL, indented with text labels, PS only

ALLDE ----- AN, ED, UP, EW, FS, TIDE, IN, PA, PAN, AG, AGN, OS, SO, DT,
 LA, DS, PIT, PI, OD, AI, PRAI, RLI, NTE, REP, REN, IC (ICM,
 ICS), ICA, ICI, CM, FA, GIS, PGC, CLMN, ABDE* , DETDDE*, CLMDE*
 (* English or French text if German text is not available)
 ALLGDE ----- ALLDE plus GI
 ALLDE.OS ----- ALLDE, OS only
 ALLGDE.OS ----- ALLDE.OS plus GI
 ALLDE.PS ----- ALLDE, PS only

ALLFR ----- AN, ED, UP, EW, FS, TIFR, IN, PA, PAN, AG, AGN, OS, SO, DT,
 LA, DS, PIT, PI, OD, AI, PRAI, RLI, NTE, REP, REN, IC (ICM,
 ICS), ICA, ICI, CM, FA, GIS, PGC, CLMN, ABFR* , DETDFR*, CLMFR*
 (* English or German text if French text is not available)
 ALLGFR ----- ALLFR plus GI
 ALLFR.OS ----- ALLFR, OS only
 ALLGFR.OS ----- ALLFR.OS plus GI

ALLFR.PS --- ALLFR, PS only

BRIEF ----- AN, ED, UP, EW, FS, TI, IN, PA, PAN, AG, AGN, OS, SO, DT,
LA, DS, PIT, PI, OD, AI, PRAI, RLI, NTE, REP, REN, IC (ICM,
ICS), ICA, ICI, CM, FA, GIS, PGC, CLMN, AB*, MCLM*
(* German or French text if English text is not available)

BRIEFG ----- BRIEF plus GI

BRIEF.OS --- BRIEF, OS only

BRIEFG.OS -- BRIEF.OS plus GI

BRIEF.PS --- BRIEF, PS only

IBRIEF ----- BRIEF, indented with text labels

IBRIEFG ----- IBRIEF plus GI

IBRIEF.OS -- BRIEF, indented with text labels, OS only

IBRIEFG.OS - IBRIEF.OS plus GI

IBRIEF.PS -- BRIEF, indented with text labels, PS only

BIB ----- AN, ED, UP, EW, FS, TI, TIDE, TIFR, IN, PA, PAN, AG, AGN,
OS, SO, DT, LA, DS, PIT, PI, OD, AI, PRAI, RLI, NTE, REP, REN

BIB.OS ----- BIB, OS only

BIB.PS ----- BIB, PS only

IBIB ----- BIB, indented with text labels

IBIB.OS ----- BIB, indented with text labels, OS only

IBIB.PS ----- BIB, indented with text labels, PS only

BIBU ----- BIB, with German headers

BIBU.OS ----- BIB, with German headers, OS only

BIBU.PS ----- BIB, with German headers, PS only

STD ----- AN, ED, UP, EW, FS, TI, TIDE, TIFR, IN, PA, SO, DS, PIT, PI,
OD, AI, PRAI, RLI, NTE, REP, REN, IC (ICM, ICS), ICA, ICI

STD.OS ----- STD, OS only

STD.PS ----- STD, PS only

ISTD ----- STD, indented with text labels

ISTD.OS ----- STD, indented with text labels, OS only

ISTD.PS ----- STD, indented with text labels, PS only

STDU ----- STD, with German headers

STDU.OS ----- STD, with German headers, OS only

STDU.PS ----- STD, with German headers, PS only

IND ----- ED, UP, EW, FS, IC (ICM, ICS), ICA, ICI

IND.OS ----- IND, OS only

IND.PS ----- IND, PS only

TRI ----- TI, TIDE, TIFR, IC (ICM, ICS), ICA, ICI, CLMN, PGC, FA, GIS

TRI.OS ----- TRI, OS only

TRI.PS ----- TRI, PS only

TX ----- DETD, CLM

TX.OS ----- TX, OS only

TX.PS ----- TX, PS only

TXDE ----- DETDDE, CLMDE

TXDE.OS ----- TXDE, OS only

TXDE.PS ----- TXDE, PS only

TXFR ----- DETDFR, CLMFR

TXFR.OS ----- TXFR, OS only

TXFR.PS ----- TXFR, PS only

To display a particular field or fields, enter the display field codes. For a list of display field codes, enter 'HELP DFIELDS' at an arrow prompt (=>). Examples of formats include: 'TI'; 'AN,TI,AU'; 'BIB,CT'; 'TI,CT'.

The order of the terms in the formats is not important, but information will be displayed in the same order as the format specification.

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* * * * * STN Columbus * * * * *

FILE 'HOME' ENTERED AT 14:25:06 ON 08 AUG 2003

| => file caplus uspatful europatful japio medline biosis embase | | |
|--|------------------|---------------|
| COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION |
| FULL ESTIMATED COST | 0.21 | 0.21 |

FILE 'CAPLUS' ENTERED AT 14:25:45 ON 08 AUG 2003
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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FILE 'EUROPATFULL' ENTERED AT 14:25:45 ON 08 AUG 2003
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FILE 'BIOSIS' ENTERED AT 14:25:45 ON 08 AUG 2003
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FILE 'EMBASE' ENTERED AT 14:25:45 ON 08 AUG 2003
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=> s (amino acid) and (partic or powder)
) IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s (amino acid) and (partic or powder)
1 FILES SEARCHED...

<-----User Break----->

SEARCH ENDED BY USER
2 FILES SEARCHED...
SEARCH ENDED BY USER

=> s (amino acid) and (partic? or powder?)
1 FILES SEARCHED...
2 FILES SEARCHED...
3 FILES SEARCHED...
L1 204349 (AMINO ACID) AND (PARTIC? OR POWDER?)

=> s l1 and leucine
L2 36535 L1 AND LEUCINE

=> s l2 and (bulk density)
L3 150 L2 AND (BULK DENSITY)

ENTER DISPLAY FORMAT (STD):ibib ab

L6 ANSWER 1 OF 1 EUROPATFULL COPYRIGHT 2003 WILA on STN

GRANTED PATENT - ERTEILTES PATENT - BREVET DELIVRE

ACCESSION NUMBER: 1137399 EUROPATFULL EW 200320 FS PS
TITLE: IMPROVEMENTS IN OR RELATING TO **POWDERS**.
VERBESSERUNGEN IN BEZUG AUF PULVER.
AMELIORATIONS APPORTEES A DES POUDRES.
INVENTOR(S): GANDERTON, David, Crooked Chimneys Cheriton Bishop,
Exeter EX6 6JL, GB;
MORTON, David Alexander Vodden, 2nd Floor Flat Linsley
House Beechen Cliff Road, Bath BA2 4QR, GB;
LUCAS, Paul, 5 Felderland Close Felderland Lane, Worth
Deal CT14 0PB, GB
PATENT ASSIGNEE(S): Vectura Limited, 12 St. James's Square, London SW1Y 4RB,
GB
PATENT ASSIGNEE NO: 3050110
AGENT: Jump, Timothy John Simon et al., Venner Shipley & Co. 20
Little Britain, London EC1A 7DH, GB
AGENT NUMBER: 55592
OTHER SOURCE: MEPB2003026 EP 1137399 B1 0017
SOURCE: Wila-EPS-2003-H20-T1
DOCUMENT TYPE: Patent
LANGUAGE: Anmeldung in Englisch; Veroeffentlichung in Englisch
DESIGNATED STATES: R AT; R BE; R CH; R CY; R DE; R DK; R ES; R FI; R FR; R
GB; R GR; R IE; R IT; R LI; R LU; R MC; R NL; R PT; R
SE; R LT; R LV; R SI
PATENT INFO.PUB.TYPE: EPB1 EUROPAEISCHE PATENTSCHRIFT (Internationale
Anmeldung)
PATENT INFORMATION:
PATENT NO KIND DATE

EP 1137399 B1 20030514
'OFFENLEGUNGS' DATE: 20011004
APPLICATION INFO.: EP 1999-958404 19991209
PRIORITY APPLN. INFO.: GB 1998-27145 19981209
RELATED DOC. INFO.: WO 99-GB4156 991209 INTAKZ
WO 00033811 000615 INTPNR
REFERENCE PAT. INFO.: WO 96-23485 A WO 96-32096 A
WO 97-03649 A

=> d his

(FILE 'HOME' ENTERED AT 14:25:06 ON 08 AUG 2003)

FILE 'CAPLUS, USPATFULL, EUROPATFULL, JAPIO, MEDLINE, BIOSIS, EMBASE'
ENTERED AT 14:25:45 ON 08 AUG 2003

L1 204349 S (AMINO ACID) AND (PARTIC? OR POWDER?)
L2 36535 S L1 AND LEUCINE
L3 150 S L2 AND (BULK DENSITY)
L4 21 S L3 AND (MMAD OR (AERODYNAMIC DIAMETER))
L5 1 S L4 AND FLAKE
L6 1 S L4 AND FLAKE?

=> d 14 1-21

L4 ANSWER 1 OF 21 USPATFULL on STN
AN 2003:187463 USPATFULL
TI **Particulate** compositions for improving solubility of poorly
soluble agents

IN Batycky, Richard P., Newton, MA, UNITED STATES
 Grandolfi, George, Milford, OH, UNITED STATES
 Plunkett, Sean, Westborough, MA, UNITED STATES
 Lipp, Michael M., Framingham, MA, UNITED STATES
 Wright, James, Lexington, MA, UNITED STATES
 PA Advanced Inhalation Research Inc., Cambridge, MA, UNITED STATES (U.S.
 corporation)
 PI US 2003129250 A1 20030710
 AI US 2002-300726 A1 20021120 (10)
 PRAI US 2001-331810P 20011120 (60)
 DT Utility
 FS APPLICATION
 LN.CNT 1606
 INCL INCLM: 424/490.000
 INCLS: 514/176.000
 NCL NCLM: 424/490.000
 NCLS: 514/176.000
 IC [7]
 ICM: A61K031-58
 ICS: A61K009-14; A61K009-16
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 2 OF 21 USPATFULL on STN
 AN 2003:187354 USPATFULL
 TI Pulmonary delivery of aminoglycosides
 IN Tarara, Thomas E., Burlingame, CA, UNITED STATES
 Weers, Jeffry G., Half Moon Bay, CA, UNITED STATES
 Venthoye, Geraldine, Foster City, CA, UNITED STATES
 PI US 2003129140 A1 20030710
 AI US 2002-327510 A1 20021219 (10)
 PRAI US 2001-342827P 20011219 (60)
 DT Utility
 FS APPLICATION
 LN.CNT 1023
 INCL INCLM: 424/046.000
 INCLS: 514/035.000; 514/037.000; 514/039.000
 NCL NCLM: 424/046.000
 NCLS: 514/035.000; 514/037.000; 514/039.000
 IC [7]
 ICM: A61L009-04
 ICS: A61K009-14; A61K031-704
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 3 OF 21 USPATFULL on STN
 AN 2003:181404 USPATFULL
 TI **Particles** for inhalation having rapid release properties
 IN Schmitke, Jennifer L., Boston, MA, UNITED STATES
 Chen, Donghao, Lexington, MA, UNITED STATES
 Batycky, Richard P., Newton, MA, UNITED STATES
 Edwards, David A., Boston, MA, UNITED STATES
 PA Advanced Inhalation Research, Inc., Cambridge, MA, UNITED STATES (U.S.
 corporation)
 PI US 2003125236 A1 20030703
 AI US 2002-179463 A1 20020624 (10)
 RLI Continuation-in-part of Ser. No. US 2001-888126, filed on 22 Jun 2001,
 PENDING Continuation-in-part of Ser. No. US 2000-752109, filed on 29 Dec
 2000, ABANDONED
 DT Utility
 FS APPLICATION
 LN.CNT 2328
 INCL INCLM: 514/003.000
 INCLS: 514/574.000
 NCL NCLM: 514/003.000
 NCLS: 514/574.000

IC [7]
ICM: A61K038-28
ICS: A61K031-19
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 4 OF 21 USPATFULL on STN
AN 2003:172669 USPATFULL
TI **Particles** for inhalation having sustained release properties
IN Basu, Sujit K., Cambridge, MA, UNITED STATES
Hrkach, Jeffrey, Cambridge, MA, UNITED STATES
Lipp, Michael, Framingham, MA, UNITED STATES
Elbert, Katharina, Cambridge, MA, UNITED STATES
Edwards, David A., Cambridge, MA, UNITED STATES
PA Advanced Inhalation Research, Inc., Cambridge, MA (U.S. corporation)
PI US 2003118513 A1 20030626
AI US 2002-202616 A1 20020723 (10)
RLI Continuation of Ser. No. US 2000-752109, filed on 29 Dec 2000, ABANDONED
DT Utility
FS APPLICATION
LN.CNT 1745
INCL INCLM: 424/046.000
INCLS: 514/002.000
NCL NCLM: 424/046.000
NCLS: 514/002.000
IC [7]
ICM: A61K038-00
ICS: A61K009-00; A61L009-04
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 5 OF 21 USPATFULL on STN
AN 2003:172666 USPATFULL
TI Pulmonary administration of chemically modified insulin
IN Patton, John S., Los Altos, CA, UNITED STATES
Kuo, Mei-Chang, Palo Alto, CA, UNITED STATES
Harris, J. Milton, Huntsville, AL, UNITED STATES
Leach, Chester, El Granada, CA, UNITED STATES
Perkins, Kimberly, Belmont, CA, UNITED STATES
Bueche, Blaine, Castro Valley, CA, UNITED STATES
PI US 2003118510 A1 20030626
AI US 2002-154057 A1 20020521 (10)
PRAI US 2001-292423P 20010521 (60)
DT Utility
FS APPLICATION
LN.CNT 2552
INCL INCLM: 424/045.000
INCLS: 514/003.000
NCL NCLM: 424/045.000
NCLS: 514/003.000
IC [7]
ICM: A61L009-04
ICS: A61K038-28
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 6 OF 21 USPATFULL on STN
AN 2003:99173 USPATFULL
TI **Particles** for inhalation having sustained release properties
IN Vanbever, Rita, Brussels, BELGIUM
Langer, Robert S., Newton, MA, UNITED STATES
Edwards, David A., Boston, MA, UNITED STATES
Mintzes, Jeffrey, Brighton, MA, UNITED STATES
Wang, Jue, Clifton, NJ, UNITED STATES
Chen, Donghao, Lexington, MA, UNITED STATES
PA Massachusetts Institute of Technology, Cambridge, MA, UNITED STATES
(non-U.S. corporation)

PI US 2003068277 A1 20030410
AI US 2002-94955 A1 20020307 (10)
RLI Continuation of Ser. No. US 2001-909145, filed on 19 Jul 2001, ABANDONED
Continuation-in-part of Ser. No. US 1999-394233, filed on 13 Sep 1999,
PENDING Continuation-in-part of Ser. No. US 1997-971791, filed on 17 Nov
1997, GRANTED, Pat. No. US 5985309
PRAI US 1997-59004P 19970915 (60)
DT Utility
FS APPLICATION
LN.CNT 1469
INCL INCLM: 424/046.000
NCL NCLM: 424/046.000
IC [7]
ICM: A61K009-14
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 7 OF 21 USPATFULL on STN
AN 2003:78040 USPATFULL
TI **Powder** formulation
IN Heijerman, Hendrikus Gerardus M., Zoetermeer, NETHERLANDS
Le Brun, Petrus Paulus H., The Hague, NETHERLANDS
Frijlink, Henderik Willem, Eelde, NETHERLANDS
de Boer, Anne Haaije, Drachten, NETHERLANDS
PA Rijksuniversiteit Groningen, Groningen, NETHERLANDS (non-U.S.
corporation)
PI US 2003053960 A1 20030320
AI US 2002-223707 A1 20020819 (10)
RLI Continuation of Ser. No. WO 2001-NL133, filed on 19 Feb 2001, UNKNOWN
PRAI EP 2000-200550 20000217
DT Utility
FS APPLICATION
LN.CNT 776
INCL INCLM: 424/046.000
INCLS: 514/012.000; 514/179.000
NCL NCLM: 424/046.000
NCLS: 514/012.000; 514/179.000
IC [7]
ICM: A61L009-04
ICS: A61K038-17; A61K031-56; A61K009-14
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 8 OF 21 USPATFULL on STN
AN 2003:40663 USPATFULL
TI Dry **powder** compositions having improved dispersivity
IN Kuo, Mei-Chang, Palo Alto, CA, United States
Lechuga-Ballesteros, David, Santa Clara, CA, United States
PA Inhale Therapeutic Systems, Inc., San Carlos, CA, United States (U.S.
corporation)
PI US 6518239 B1 20030211
AI US 2000-548759 20000413 (9)
PRAI US 2000-178415P 20000127 (60)
US 2000-178383P 20000127 (60)
US 1999-172769P 19991220 (60)
US 1999-164236P 19991108 (60)
US 1999-162451P 19991029 (60)
DT Utility
FS GRANTED
LN.CNT 1632
INCL INCLM: 514/002.000
INCLS: 530/300.000
NCL NCLM: 514/002.000
NCLS: 530/300.000
IC [7]
ICM: A01N037-18

ICS: A61K038-00
EXF 514/2; 530/300
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 9 OF 21 USPATFULL on STN
AN 2003:33158 USPATFULL
TI Pulmonary delivery in treating disorders of the central nervous system
IN Bartus, Raymond T., Sudbury, MA, United States
Emerich, Dwaine F., Cranston, RI, United States
PA Advanced Inhalation Research, Inc., Cambridge, MA, United States (U.S.
corporation)
PI US 6514482 B1 20030204
AI US 2000-665252 20000919 (9)
DT Utility
FS GRANTED
LN.CNT 1360
INCL INCLM: 424/045.000
INCLS: 424/043.000; 424/789.000; 514/220.000; 128/203.150
NCL NCLM: 424/045.000
NCLS: 128/203.150; 424/043.000; 424/489.000; 514/220.000
IC [7]
ICM: A61K009-12
ICS: A61K009-14; A61K009-72
EXF 514/220; 514/252; 514/255; 424/45; 424/489; 128/203.15; 560/43
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 10 OF 21 USPATFULL on STN
AN 2003:23278 USPATFULL
TI Control of process humidity to produce large, porous **particles**
IN Chen, Donghao, Lexington, MA, UNITED STATES
Batycky, Richard P., Newton, MA, UNITED STATES
Johnston, Lloyd, Belmont, MA, UNITED STATES
Mintzes, Jeffrey, Brighton, MA, UNITED STATES
PA Advanced Inhalation Research, Inc., Cambridge, MA, UNITED STATES, 02139
(U.S. corporation)
PI US 2003017113 A1 20030123
AI US 2001-837620 A1 20010418 (9)
DT Utility
FS APPLICATION
LN.CNT 1000
INCL INCLM: 424/045.000
INCLS: 264/005.000
NCL NCLM: 424/045.000
NCLS: 264/005.000
IC [7]
ICM: A61K009-14
ICS: A61L009-04; B29B009-00
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 11 OF 21 USPATFULL on STN
AN 2002:315079 USPATFULL
TI Pulmonary delivery of polyene antifungal agents
IN Weickert, Michael, Belmont, CA, UNITED STATES
Gordon, Marc S., Sunnyvale, CA, UNITED STATES
Kumar, Sandeep, Sunnyvale, CA, UNITED STATES
Yang, Bing, Redwood City, CA, UNITED STATES
Sarwar, Razaq, Fremont, CA, UNITED STATES
PI US 2002177562 A1 20021128
AI US 2001-32239 A1 20011221 (10)
PRAI US 2000-257613P 20001221 (60)
DT Utility
FS APPLICATION
LN.CNT 1856
INCL INCLM: 514/027.000

INCLS: 264/005.000
NCL NCLM: 514/027.000
NCLS: 264/005.000
IC [7]
ICM: A61K031-7048
ICS: B29B009-00

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 12 OF 21 USPATFULL on STN
AN 2002:314374 USPATFULL
TI Storage stable **powder** compositions of interleukin-4 receptor
IN Hastedt, Jayne E., San Carlos, CA, UNITED STATES
Cabot, Kirsten M., San Francisco, CA, UNITED STATES
Gong, David K., Foster City, CA, UNITED STATES
Hester, Dennis M., Richmond, CA, UNITED STATES
PI US 2002176846 A1 20021128
AI US 2001-32238 A1 20011221 (10)
PRAI US 2000-256786P 20001221 (60)
DT Utility
FS APPLICATION
LN.CNT 1711
INCL INCLM: 424/085.200
NCL NCLM: 424/085.200
IC [7]
ICM: A61K038-20

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 13 OF 21 USPATFULL on STN
AN 2002:258380 USPATFULL
TI **Particles** for inhalation having rapid release properties
IN Schmitke, Jennifer L., Boston, MA, UNITED STATES
Chen, Donghao, Lexington, MA, UNITED STATES
Batycky, Richard P., Newton, MA, UNITED STATES
Edwards, David A., Boston, MA, UNITED STATES
Hrkach, Jeffrey S., Cambridge, MA, UNITED STATES
PA Advanced Inhalation Research, Inc., Cambridge, MA (U.S. corporation)
PI US 2002141946 A1 20021003
AI US 2001-888126 A1 20010622 (9)
RLI Continuation-in-part of Ser. No. US 2000-752109, filed on 29 Dec 2000,
PENDING
DT Utility
FS APPLICATION
LN.CNT 1786
INCL INCLM: 424/046.000
INCLS: 514/003.000
NCL NCLM: 424/046.000
NCLS: 514/003.000
IC [7]
ICM: A61K038-28
ICS: A61K009-14

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 14 OF 21 USPATFULL on STN
AN 2002:126881 USPATFULL
TI Inhaleable spray dried 4-helix bundle protein **powders** having
minimized aggregation
IN Stevenson, Cynthia, Mountain View, CA, UNITED STATES
Hastedt, Jayne E., San Carlos, CA, UNITED STATES
Lehrman, S. Russ, Los Altos, CA, UNITED STATES
Chiang, Hi-Shi, San Jose, CA, UNITED STATES
Bennett, David B., San Jose, CA, UNITED STATES
Lesikar, David, Palo Alto, CA, UNITED STATES
Yang, Bing, Redwood City, CA, UNITED STATES
Gong, David, San Mateo, CA, UNITED STATES

Cabot, Kirsten, San Francisco, CA, UNITED STATES
 PA Inhale Therapeutic Systems, Inc., San Carlos, CA, UNITED STATES, 94070
 (U.S. corporation)
 PI US 2002065399 A1 20020530
 US 6569406 B2 20030527
 AI US 2001-923519 A1 20010807 (9)
 PRAI US 2000-223144P 20000807 (60)
 US 2000-228634P 20000829 (60)
 US 2000-240478P 20001013 (60)
 DT Utility
 FS APPLICATION
 LN.CNT 2046
 INCL INCLM: 530/399.000
 INCLS: 424/046.000; 514/002.000
 NCL NCLM: 424/043.000
 NCLS: 128/203.150; 424/046.000; 424/489.000; 514/002.000
 IC [7]
 ICM: A61K038-27
 ICS: C07K014-61
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 15 OF 21 USPATFULL on STN
 AN 2002:112277 USPATFULL
 TI Pulmonary delivery in treating disorders of the central nervous system
 IN Bartus, Raymond T., Sudbury, MA, UNITED STATES
 Emerich, Dwaine F., Cranston, RI, UNITED STATES
 PA Advanced Inhalation Research, Inc., Cambridge, MA, UNITED STATES, 02139
 (U.S. corporation)
 PI US 2002058009 A1 20020516
 AI US 2001-877734 A1 20010608 (9)
 RLI Continuation-in-part of Ser. No. US 2000-665252, filed on 19 Sep 2000,
 PENDING
 DT Utility
 FS APPLICATION
 LN.CNT 2249
 INCL INCLM: 424/043.000
 NCL NCLM: 424/043.000
 IC [7]
 ICM: A61K009-00
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 16 OF 21 USPATFULL on STN
 AN 2002:99409 USPATFULL
 TI **Particles** for inhalation having sustained release properties
 IN Edwards, David A., Boston, MA, UNITED STATES
 Langer, Robert S., Newton, MA, UNITED STATES
 Vanbever, Rita, Brussels, BELGIUM
 Mintzes, Jeffrey, Brighton, MA, UNITED STATES
 Wang, Jue, Clifton, NJ, UNITED STATES
 Chen, Donghao, Quincy, MA, UNITED STATES
 PA Massachusetts Institute of Technology The Penn State Research Foundation
 (U.S. corporation)
 PI US 2002052310 A1 20020502
 AI US 2000-752106 A1 20001229 (9)
 RLI Continuation-in-part of Ser. No. US 1999-394233, filed on 13 Sep 1999,
 PENDING Continuation-in-part of Ser. No. US 1997-971791, filed on 17 Nov
 1997, GRANTED, Pat. No. US 5985309
 PRAI US 1997-59004P 19970915 (60)
 DT Utility
 FS APPLICATION
 LN.CNT 1702
 INCL INCLM: 514/002.000
 INCLS: 424/043.000
 NCL NCLM: 514/002.000

NCLS: 424/043.000
IC [7]
ICM: A61K038-17
ICS: A61K009-00
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 17 OF 21 USPATFULL on STN
AN 2002:65345 USPATFULL
TI Highly efficient delivery of a large therapeutic mass aerosol
IN Edwards, David A., Boston, MA, UNITED STATES
Batycky, Richard P., Newton, MA, UNITED STATES
Johnston, Lloyd, Belmont, MA, UNITED STATES
PA Advanced Inhalation Research, Inc., Cambridge, MA (U.S. corporation)
PI US 2002035993 A1 20020328
AI US 2001-878146 A1 20010608 (9)
RLI Continuation-in-part of Ser. No. US 2000-591307, filed on 9 Jun 2000,
PENDING
DT Utility
FS APPLICATION
LN.CNT 2844
INCL INCLM: 128/203.150
NCL NCLM: 128/203.150
IC [7]
ICM: B05D007-14
ICS: A61M015-00; A61M016-00; B65D083-06
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 18 OF 21 USPATFULL on STN
AN 2002:60643 USPATFULL
TI **Particles** for inhalation having sustained release properties
IN Edwards, David A., Boston, MA, UNITED STATES
Hrkach, Jeffrey S., Cambridge, MA, UNITED STATES
PA Advanced Inhalation Research Inc., Cambridge, MA, UNITED STATES (U.S.
corporation)
PI US 2002034477 A1 20020321
AI US 2001-822716 A1 20010330 (9)
RLI Continuation-in-part of Ser. No. US 1999-383054, filed on 25 Aug 1999,
PENDING
DT Utility
FS APPLICATION
LN.CNT 1396
INCL INCLM: 424/043.000
INCLS: 514/004.000
NCL NCLM: 424/043.000
NCLS: 514/004.000
IC [7]
ICM: A61K038-28
ICS: A61K009-00
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 19 OF 21 USPATFULL on STN
AN 2001:193968 USPATFULL
TI Modulation of release from dry **powder** formulations
IN Basu, Sujit K., Cambridge, MA, United States
Caponetti, Giovanni, Somerville, MA, United States
Deaver, Daniel R., Franklin, MA, United States
Elbert, Katharina J., Cambridge, MA, United States
Hrkach, Jeffrey S., Cambridge, MA, United States
Lipp, Michael M., Framingham, MA, United States
PA Advanced Inhalation Research, Inc., Cambridge, MA, United States, 02139
(U.S. corporation)
PI US 2001036481 A1 20011101
AI US 2001-792869 A1 20010223 (9)
RLI Continuation-in-part of Ser. No. US 2000-644736, filed on 23 Aug 2000,

PENDING
PRAI US 1999-150742P 19990825 (60)
DT Utility
FS APPLICATION
LN.CNT 1529
INCL INCLM: 424/499.000
INCLS: 424/450.000
NCL NCLM: 424/499.000
NCLS: 424/450.000
IC [7]
ICM: A61K009-14
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L4 ANSWER 20 OF 21 EUROPATFULL COPYRIGHT 2003 WILA on STN

GRANTED PATENT - ERTEILTES PATENT - BREVET DELIVRE

AN 1137399 EUROPATFULL ED 20030519 EW 200320 FS PS
TIEN IMPROVEMENTS IN OR RELATING TO **POWDERS**.
TIDE VERBESSERUNGEN IN BEZUG AUF PULVER.
TIFR AMELIORATIONS APPORTEES A DES POUDRES.
IN GANDERTON, David, Crooked Chimneys Cheriton Bishop, Exeter EX6 6JL, GB;
MORTON, David Alexander Vodden, 2nd Floor Flat Linsley House Beechen
Cliff Road, Bath BA2 4QR, GB;
LUCAS, Paul, 5 Felderland Close Felderland Lane, Worth Deal CT14 0PB, GB
PA Vectura Limited, 12 St. James's Square, London SW1Y 4RB, GB
SO Wila-EPS-2003-H20-T1
DS R AT; R BE; R CH; R CY; R DE; R DK; R ES; R FI; R FR; R GB; R GR; R IE;
R IT; R LI; R LU; R MC; R NL; R PT; R SE; R LT; R LV; R SI
PIT EPB1 EUROPAEISCHE PATENTSCHRIFT (Internationale Anmeldung)
PI EP 1137399 B1 20030514
OD 20011004
AI EP 1999-958404 19991209
PRAI GB 1998-27145 19981209
RLI WO 99-GB4156 991209 INTAKZ
WO 00033811 000615 INTPNR
REP WO 96-23485 A WO 96-32096 A
WO 97-03649 A
IC ICM A61K009-00
ICS A61K009-14 A61K009-72

L4 ANSWER 21 OF 21 EUROPATFULL COPYRIGHT 2003 WILA on STN

PATENT APPLICATION - PATENTANMELDUNG - DEMANDE DE BREVET

AN 1129705 EUROPATFULL ED 20010917 EW 200136 FS OS
TIEN **Powder** formulation for inhalation.
TIDE Pulverformulierung zur Inhalation.
TIFR Formulation en poudre pour inhalation.
IN Heijerman, Hendrikus, Gerardus Maria, Azuriet 14, 2719 GL Zoetermeer,
NL;
Frijlink, Henderik Willem, Hemstukken 19, 9761 KM Eelde, NL;
Le Brun, Petrus Paulus Hendricus, De Mildestraat 21, 2596 SV The Hague,
NL;
de Boer, Anne Haaije, Bouriciuslaan 53, 9203 PC Drachten, NL
PA Rijksuniversiteit te Groningen, Broerstraat 5, 9712 CP Groningen, NL
SO Wila-EPZ-2001-H36-T1b
DS R AT; R BE; R CH; R CY; R DE; R DK; R ES; R FI; R FR; R GB; R GR; R IE;
R IT; R LI; R LU; R MC; R NL; R PT; R SE; R AL; R LT; R LV; R MK; R RO;
R SI
PIT EPA1 EUROPAEISCHE PATENTANMELDUNG
PI EP 1129705 A1 20010905
OD 20010905
AI EP 2000-200550 20000217

AB Spray dried **particles** having specified aerodynamic characteristics are produced by atomizing a liquid feed and contacting the liquid feed with a drying gas, such as, for example, air or nitrogen. The humidity of the drying gas is controlled to a value, expressed, for instance, as dew point, which is known to produce **particles** having a specified tap density or **aerodynamic diameter**. **Particles** having a volume median geometric diameter greater than about 5 microns and a tap density less than about 0.4 g/cm.³ are preferred.

L4 ANSWER 11 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2002:315079 USPATFULL
TITLE: Pulmonary delivery of polyene antifungal agents
INVENTOR(S): Weickert, Michael, Belmont, CA, UNITED STATES
Gordon, Marc S., Sunnyvale, CA, UNITED STATES
Kumar, Sandeep, Sunnyvale, CA, UNITED STATES
Yang, Bing, Redwood City, CA, UNITED STATES
Sarwar, Razaq, Fremont, CA, UNITED STATES

| | NUMBER | KIND | DATE |
|---------------------|---------------|------|---------------|
| PATENT INFORMATION: | US 2002177562 | A1 | 20021128 |
| APPLICATION INFO.: | US 2001-32239 | A1 | 20011221 (10) |

| | NUMBER | DATE |
|-----------------------|--|---------------|
| PRIORITY INFORMATION: | US 2000-257613P | 20001221 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | INHALE THERAPEUTIC SYSTEMS, INC, 150 INDUSTRIAL ROAD, SAN CARLOS, CA, 94070 | |
| NUMBER OF CLAIMS: | 60 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 1 Drawing Page(s) | |
| LINE COUNT: | 1856 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides spray-dried polyene compositions for oral inhalation to the lung. The polyene antifungal compositions demonstrate superior aerosol properties, do not exhibit appreciable degradation of the polyene upon spray-drying, and are useful in the treatment and prophylaxis of both pulmonary and systemic fungal infections.

L4 ANSWER 12 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2002:314374 USPATFULL
TITLE: Storage stable **powder** compositions of
interleukin-4 receptor
INVENTOR(S): Hastedt, Jayne E., San Carlos, CA, UNITED STATES
Cabot, Kirsten M., San Francisco, CA, UNITED STATES
Gong, David K., Foster City, CA, UNITED STATES
Hester, Dennis M., Richmond, CA, UNITED STATES

| | NUMBER | KIND | DATE |
|---------------------|---------------|------|---------------|
| PATENT INFORMATION: | US 2002176846 | A1 | 20021128 |
| APPLICATION INFO.: | US 2001-32238 | A1 | 20011221 (10) |

| | NUMBER | DATE |
|-----------------------|--|---------------|
| PRIORITY INFORMATION: | US 2000-256786P | 20001221 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | INHALE THERAPEUTIC SYSTEMS, INC, 150 INDUSTRIAL ROAD, SAN CARLOS, CA, 94070 | |
| NUMBER OF CLAIMS: | 43 | |

EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 1711
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides storage stable dry **powder** compositions of IL-4R. The **powder** compositions demonstrate superior chemical and physical stability over their solution counterparts, **particularly** upon storage under varying conditions of temperature and humidity. Moreover, the **powders**, as prepared, possess good aerosol properties, which are maintained upon storage.

L4 ANSWER 13 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2002:258380 USPATFULL
TITLE: **Particles** for inhalation having rapid release properties
INVENTOR(S): Schmitke, Jennifer L., Boston, MA, UNITED STATES
Chen, Donghao, Lexington, MA, UNITED STATES
Batycky, Richard P., Newton, MA, UNITED STATES
Edwards, David A., Boston, MA, UNITED STATES
Hrkach, Jeffrey S., Cambridge, MA, UNITED STATES
PATENT ASSIGNEE(S): Advanced Inhalation Research, Inc., Cambridge, MA (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 2002141946 | A1 | 20021003 |
| APPLICATION INFO.: | US 2001-888126 | A1 | 20010622 (9) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 2000-752109, filed on 29 Dec 2000, PENDING | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133 | | |
| NUMBER OF CLAIMS: | 60 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 7 Drawing Page(s) | | |
| LINE COUNT: | 1786 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention generally relates to formulations having **particles** comprising phospholipids, bioactive agent and excipients and the pulmonary delivery thereof. Dry **powder** inhaled insulin formulations are disclosed. Formulations comprising DPPC, insulin and sodium citrate which are useful in the treatment of diabetes are disclosed. Also, the invention relates to a method of for the pulmonary delivery of a bioactive agent comprising administering to the respiratory tract of a patient in need of treatment, or diagnosis an effective amount of **particles** comprising a bioactive agent or any combination thereof in association, wherein release of the agent from the administered **particles** occurs in a rapid fashion.

L4 ANSWER 14 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2002:126881 USPATFULL
TITLE: Inhaleable spray dried 4-helix bundle protein **powders** having minimized aggregation
INVENTOR(S): Stevenson, Cynthia, Mountain View, CA, UNITED STATES
Hastedt, Jayne E., San Carlos, CA, UNITED STATES
Lehrman, S. Russ, Los Altos, CA, UNITED STATES
Chiang, Hi-Shi, San Jose, CA, UNITED STATES
Bennett, David B., San Jose, CA, UNITED STATES
Lesikar, David, Palo Alto, CA, UNITED STATES
Yang, Bing, Redwood City, CA, UNITED STATES
Gong, David, San Mateo, CA, UNITED STATES
Cabot, Kirsten, San Francisco, CA, UNITED STATES

PATENT ASSIGNEE(S): Inhale Therapeutic Systems, Inc., San Carlos, CA,
UNITED STATES, 94070 (U.S. corporation)

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|--------------|
| PATENT INFORMATION: | US 2002065399 | A1 | 20020530 |
| | US 6569406 | B2 | 20030527 |
| APPLICATION INFO.: | US 2001-923519 | A1 | 20010807 (9) |

| | NUMBER | DATE |
|-----------------------|--|---------------|
| PRIORITY INFORMATION: | US 2000-223144P | 20000807 (60) |
| | US 2000-228634P | 20000829 (60) |
| | US 2000-240478P | 20001013 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | INHALE THERAPEUTIC SYSTEMS, INC, 150 INDUSTRIAL ROAD, SAN CARLOS, CA, 94070 | |
| NUMBER OF CLAIMS: | 52 | |
| EXEMPLARY CLAIM: | 1 | |
| LINE COUNT: | 2046 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides highly dispersible spray-dried **powder** compositions, and in **particular**, inhaleable dry **powder** compositions for aerosolized delivery to the lungs. The **powders** of the invention are produced by spray drying a 4 .alpha.-helix bundle protein under conditions which both (i) protect the protein from aggregation and (ii) provide **particles** suitable for inhalation (i.e., demonstrating superior aerosol performance).

L4 ANSWER 15 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2002:112277 USPATFULL
TITLE: Pulmonary delivery in treating disorders of the central nervous system
INVENTOR(S): Bartus, Raymond T., Sudbury, MA, UNITED STATES
Emerich, Dwaine F., Cranston, RI, UNITED STATES
PATENT ASSIGNEE(S): Advanced Inhalation Research, Inc., Cambridge, MA,
UNITED STATES, 02139 (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 2002058009 | A1 | 20020516 |
| APPLICATION INFO.: | US 2001-877734 | A1 | 20010608 (9) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 2000-665252, filed on 19 Sep 2000, PENDING | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | Ms. Carolyn S. Elmore, HAMILTON, BROOK, SMITH & REYNOLDS, P.C., Two Militia Drive, Lexington, MA, 02421-4799 | | |
| NUMBER OF CLAIMS: | 65 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 24 Drawing Page(s) | | |
| LINE COUNT: | 2249 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for treating a disorder of the central nervous system includes administering to the respiratory tract of a patient a drug which is delivered to the pulmonary system, for instance to the alveoli or the deep lung. The drug is administered at a dose which is at least about two-fold less than the dose required by oral administration. **Particles** that include the drug can be employed. Preferred **particles** have a tap density of less than about 0.4 g/cm.sup.3. In addition to the medicament, the **particles** can include other materials such as, for example, phospholipids, amino acids, combinations

thereof and others.

L4 ANSWER 16 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2002:99409 USPATFULL

TITLE: **Particles** for inhalation having sustained release properties

INVENTOR(S): Edwards, David A., Boston, MA, UNITED STATES
Langer, Robert S., Newton, MA, UNITED STATES
Vanbever, Rita, Brussels, BELGIUM
Mintzes, Jeffrey, Brighton, MA, UNITED STATES
Wang, Jue, Clifton, NJ, UNITED STATES

Chen, Donghao, Quincy, MA, UNITED STATES
PATENT ASSIGNEE(S): Massachusetts Institute of Technology The Penn State
Research Foundation (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 2002052310 | A1 | 20020502 |
| APPLICATION INFO.: | US 2000-752106 | A1 | 20001229 (9) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1999-394233, filed on 13 Sep 1999, PENDING Continuation-in-part of Ser. No. US 1997-971791, filed on 17 Nov 1997, GRANTED, Pat. No. US 5985309 | | |

| | NUMBER | DATE |
|-----------------------|--|---------------|
| PRIORITY INFORMATION: | US 1997-59004P | 19970915 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | Carolyn S. Elmore, HAMILTON, BROOK, SMITH & REYNOLDS, P.C., Two Militia Drive, Lexington, MA, 02421-4799 | |
| NUMBER OF CLAIMS: | 34 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 3 Drawing Page(s) | |
| LINE COUNT: | 1702 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention generally relates to a method for pulmonary delivery of therapeutic, prophylactic and diagnostic agents to a patient wherein the agent is released in a sustained fashion, and to **particles** suitable for use in the method. In **particular**, the invention relates to a method for the pulmonary delivery of a therapeutic, prophylactic or diagnostic agent comprising administering to the respiratory tract of a patient in need of treatment, prophylaxis or diagnosis an effective amount of **particles** comprising a therapeutic, prophylactic or diagnostic agent or any combination thereof in association with a charged lipid, wherein the charged lipid has an overall net charge which is opposite to that of the agent upon association with the agent. Release of the agent from the administered **particles** occurs in a sustained fashion.

L4 ANSWER 17 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2002:65345 USPATFULL

TITLE: Highly efficient delivery of a large therapeutic mass aerosol

INVENTOR(S): Edwards, David A., Boston, MA, UNITED STATES
Batycky, Richard P., Newton, MA, UNITED STATES
Johnston, Lloyd, Belmont, MA, UNITED STATES

PATENT ASSIGNEE(S): Advanced Inhalation Research, Inc., Cambridge, MA (U.S. corporation)

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|--------------|
| PATENT INFORMATION: | US 2002035993 | A1 | 20020328 |
| APPLICATION INFO.: | US 2001-878146 | A1 | 20010608 (9) |

RELATED APPLN. INFO.: Continuation-in-part of Ser. No. US 2000-591307, filed on 9 Jun 2000, PENDING

DOCUMENT TYPE: Utility

FILE SEGMENT: APPLICATION

LEGAL REPRESENTATIVE: Ms. Carolyn S. Elmore, HAMILTON, BROOK, SMITH & REYNOLDS, P.C., Two Militia Drive, Lexington, MA, 02421-4799

NUMBER OF CLAIMS: 151

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 21 Drawing Page(s)

LINE COUNT: 2844

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A method for delivering an agent to the pulmonary system, in a single, breath-activated step or a single breath, comprises administering from a receptacle enclosing a mass of **particles**, to a subject's respiratory tract, **particles** which have a tap density of less than 0.4 g/cm.^{sup.3} and deliver at least about 50% of the mass of **particles**. The **particles** are capable of carrying agents. The agent is (1) part of the spray-drying pre-mixture and thereby incorporated into the **particles**, (2) added to separately-prepared **particles** so that the agent is in chemical association with the **particles** or (3) blended so that the agent is mixed with, and co-delivered with the **particles**.

Respirable compositions comprising carrier **particles** having a tap density of less than 0.4 g/cm.^{sup.3} and a composition comprising an agent are also disclosed. Methods of delivering these respirable compositions are also included.

L4 ANSWER 18 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2002:60643 USPATFULL

TITLE: **Particles** for inhalation having sustained release properties

INVENTOR(S): Edwards, David A., Boston, MA, UNITED STATES

Hrkach, Jeffrey S., Cambridge, MA, UNITED STATES

PATENT ASSIGNEE(S): Advanced Inhalation Research Inc., Cambridge, MA, UNITED STATES (U.S. corporation)

| | NUMBER | KIND | DATE |
|--|--|------|--------------|
| PATENT INFORMATION: | US 2002034477 | A1 | 20020321 |
| APPLICATION INFO.: | US 2001-822716 | A1 | 20010330 (9) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 1999-383054, filed on 25 Aug 1999, PENDING | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | Carolyn S. Elmore, HAMILTON, BROOK, SMITH & REYNOLDS, P.C., Two Militia Drive, Lexington, MA, 02421-4799 | | |
| NUMBER OF CLAIMS: | 52 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 3 Drawing Page(s) | | |
| LINE COUNT: | 1396 | | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | | |

AB The invention generally relates to a method for pulmonary delivery of therapeutic, prophylactic and diagnostic agents to a patient wherein the agent is released in a sustained fashion, and to **particles** suitable for use in the method. In **particular**, the invention relates to a method for the pulmonary delivery of a therapeutic, prophylactic or diagnostic agent comprising administering to the respiratory tract of a patient in need of treatment, prophylaxis or diagnosis an effective amount of **particles** comprising a multivalent metal cation which is complexed with a therapeutic, prophylactic or diagnostic agent or any combination thereof having a charge capable of complexing with the cation upon association with the

agent, a pharmaceutically acceptable carrier and optionally, a multivalent metal cation-containing component wherein the total amount of multivalent metal cation present in the **particles** is more than 1% weight/weight of the total weight of the agent (% w/w). Release of the agent from the administered **particles** occurs in a sustained fashion.

L4 ANSWER 19 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2001:193968 USPATFULL

TITLE: Modulation of release from dry **powder** formulations

INVENTOR(S): Basu, Sujit K., Cambridge, MA, United States
Caponetti, Giovanni, Somerville, MA, United States
Deaver, Daniel R., Franklin, MA, United States
Elbert, Katharina J., Cambridge, MA, United States
Hrkach, Jeffrey S., Cambridge, MA, United States
Lipp, Michael M., Framingham, MA, United States

PATENT ASSIGNEE(S): Advanced Inhalation Research, Inc., Cambridge, MA, United States, 02139 (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|--------------|
| PATENT INFORMATION: | US 2001036481 | A1 | 20011101 |
| APPLICATION INFO.: | US 2001-792869 | A1 | 20010223 (9) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 2000-644736, filed on 23 Aug 2000, PENDING | | |

| | NUMBER | DATE |
|-----------------------|--|---------------|
| PRIORITY INFORMATION: | US 1999-150742P | 19990825 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | HAMILTON BROOK SMITH AND REYNOLDS, P.C., TWO MILITIA DR, LEXINGTON, MA, 02421-4799 | |
| NUMBER OF CLAIMS: | 41 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 9 Drawing Page(s) | |
| LINE COUNT: | 1529 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB **Particles** which include a bioactive agent are prepared to have a desired matrix transition temperature. Delivery of the **particles** via the pulmonary system results in modulation of drug release from the **particles**. Sustained release and/or sustained pharmacologic action of the drug can be obtained by forming **particles** which include a combination of phospholipids that are miscible in one another and have a high matrix transition temperature.

L4 ANSWER 20 OF 21 EUROPATFULL COPYRIGHT 2003 WILA on STN

GRANTED PATENT - ERTEILTES PATENT - BREVET DELIVRE

ACCESSION NUMBER: 1137399 EUROPATFULL EW 200320 FS PS

TITLE: IMPROVEMENTS IN OR RELATING TO **POWDERS**.
VERBESSERUNGEN IN BEZUG AUF PULVER.
AMELIORATIONS APPORTEES A DES POUDRES.

INVENTOR(S): GANDERTON, David, Crooked Chimneys Cheriton Bishop, Exeter EX6 6JL, GB;
MORTON, David Alexander Vodden, 2nd Floor Flat Linsley House Beechen Cliff Road, Bath BA2 4QR, GB;
LUCAS, Paul, 5 Felderland Close Felderland Lane, Worth Deal CT14 0PB, GB

PATENT ASSIGNEE(S): Vectura Limited, 12 St. James's Square, London SW1Y 4RB, GB

PATENT ASSIGNEE NO: 3050110

AGENT: Jump, Timothy John Simon et al., Venner Shipley & Co. 20
 Little Britain, London EC1A 7DH, GB
 AGENT NUMBER: 55592
 OTHER SOURCE: MEPB2003026 EP 1137399 B1 0017
 SOURCE: Wila-EPS-2003-H20-T1
 DOCUMENT TYPE: Patent
 LANGUAGE: Anmeldung in Englisch; Veroeffentlichung in Englisch
 DESIGNATED STATES: R AT; R BE; R CH; R CY; R DE; R DK; R ES; R FI; R FR; R
 GB; R GR; R IE; R IT; R LI; R LU; R MC; R NL; R PT; R
 SE; R LT; R LV; R SI
 PATENT INFO.PUB.TYPE: EPB1 EUROPÄISCHE PATENTSCHRIFT (Internationale
 Anmeldung)

PATENT INFORMATION:

| | PATENT NO | KIND DATE |
|------------------------|----------------|---------------|
| | EP 1137399 | B1 20030514 |
| 'OFFENLEGUNGS' DATE: | | 20011004 |
| APPLICATION INFO.: | EP 1999-958404 | 19991209 |
| PRIORITY APPLN. INFO.: | GB 1998-27145 | 19981209 |
| RELATED DOC. INFO.: | WO 99-GB4156 | 991209 INTAKZ |
| | WO 00033811 | 000615 INTPNR |
| REFERENCE PAT. INFO.: | WO 96-23485 A | WO 96-32096 A |
| | WO 97-03649 A | |

L4 ANSWER 21 OF 21 EUROPATFULL COPYRIGHT 2003 WILA on STN

PATENT APPLICATION - PATENTANMELDUNG - DEMANDE DE BREVET

ACCESSION NUMBER: 1129705 EUROPATFULL EW 200136 FS OS
 TITLE: **Powder** formulation for inhalation.
 Pulverformulierung zur Inhalation.
 Formulation en poudre pour inhalation.
 INVENTOR(S): Heijerman, Hendrikus, Gerardus Maria, Azuriet 14, 2719
 GL Zoetermeer, NL;
 Frijlink, Henderik Willem, Hemstukken 19, 9761 KM Eelde,
 NL;
 Le Brun, Petrus Paulus Hendricus, De Mildestraat 21,
 2596 SV The Hague, NL;
 de Boer, Anne Haaije, Bouriciuslaan 53, 9203 PC
 Drachten, NL
 PATENT ASSIGNEE(S): Rijksuniversiteit te Groningen, Broerstraat 5, 9712 CP
 Groningen, NL
 PATENT ASSIGNEE NO: 406260
 AGENT: Ottevangers, Sietse Ulbe et al., Vereenigde, Postbus
 87930, 2508 DH Den Haag, NL
 AGENT NUMBER: 20841
 OTHER SOURCE: BEPA2001070 EP 1129705 A1 0017
 SOURCE: Wila-EPZ-2001-H36-T1b
 DOCUMENT TYPE: Patent
 LANGUAGE: Anmeldung in Englisch; Veroeffentlichung in Englisch
 DESIGNATED STATES: R AT; R BE; R CH; R CY; R DE; R DK; R ES; R FI; R FR; R
 GB; R GR; R IE; R IT; R LI; R LU; R MC; R NL; R PT; R
 SE; R AL; R LT; R LV; R MK; R RO; R SI
 PATENT INFO.PUB.TYPE: EPA1 EUROPÄISCHE PATENTANMELDUNG

PATENT INFORMATION:

| | PATENT NO | KIND DATE |
|----------------------|----------------|-------------|
| | EP 1129705 | A1 20010905 |
| 'OFFENLEGUNGS' DATE: | | 20010905 |
| APPLICATION INFO.: | EP 2000-200550 | 20000217 |

ABEN The invention relates to a **powder** formulation for
 administration by inhalation comprising an active substance and a
 pharmaceutically acceptable excipient, which composition has the form of
 a physical mixture and comprises from 5 to 25 wt.% of the excipient, and

wherein the active substance has a **particle** size distribution of from 0.5 to 10 .mu.m, and wherein the excipient has a **particle** size distribution of from 15 to 500 .mu.m.

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ICS A61K009-14 A61K038-12 A61M015-00

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+ IS NOT A RECOGNIZED COMMAND

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For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

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L4 ANSWER 1 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2003:187463 USPATFULL

TITLE: **Particulate** compositions for improving
solubility of poorly soluble agents

INVENTOR(S): Batycky, Richard P., Newton, MA, UNITED STATES
Grandolfi, George, Milford, OH, UNITED STATES
Plunkett, Sean, Westborough, MA, UNITED STATES
Lipp, Michael M., Framingham, MA, UNITED STATES
Wright, James, Lexington, MA, UNITED STATES

PATENT ASSIGNEE(S): Advanced Inhalation Research Inc., Cambridge, MA,
UNITED STATES (U.S. corporation)

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 2003129250 | A1 | 20030710 |
| APPLICATION INFO.: | US 2002-300726 | A1 | 20021120 (10) |

| | NUMBER | DATE |
|-----------------------|---|---------------|
| PRIORITY INFORMATION: | US 2001-331810P | 20011120 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133 | |
| NUMBER OF CLAIMS: | 63 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 9 Drawing Page(s) | |
| LINE COUNT: | 1606 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention is drawn to **particles** for oral drug delivery
produced by spray-drying a dilute solution of a poorly soluble agent.
The **particles** comprise regions of poorly soluble agent wherein
the dissolution rate enhancement is between about 2-fold and about
25-fold compared to the agent in bulk form.

L4 ANSWER 2 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2003:187354 USPATFULL

TITLE: Pulmonary delivery of aminoglycosides

INVENTOR(S): Tarara, Thomas E., Burlingame, CA, UNITED STATES
Weers, Jeffry G., Half Moon Bay, CA, UNITED STATES
Venthoey, Geraldine, Foster City, CA, UNITED STATES

| | NUMBER | KIND | DATE |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 2003129140 | A1 | 20030710 |
| APPLICATION INFO.: | US 2002-327510 | A1 | 20021219 (10) |

| | NUMBER | DATE |
|-----------------------|-----------------|---------------|
| PRIORITY INFORMATION: | US 2001-342827P | 20011219 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |

LEGAL REPRESENTATIVE: NEKTAR THERAPEUTICS, 150 INDUSTRIAL ROAD, SAN CARLOS,
CA, 94070

NUMBER OF CLAIMS: 35

EXEMPLARY CLAIM: 1

NUMBER OF DRAWINGS: 4 Drawing Page(s)

LINE COUNT: 1023

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention is directed to the administration of aminoglycosides. In **particular**, the present invention is directed to compositions and methods for the pulmonary administration of aminoglycosides. According to a preferred embodiment, compositions and methods are provided for the localized treatment of respiratory infections.

L4 ANSWER 3 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2003:181404 USPATFULL

TITLE: **Particles** for inhalation having rapid release properties

INVENTOR(S): Schmitke, Jennifer L., Boston, MA, UNITED STATES
Chen, Donghao, Lexington, MA, UNITED STATES
Batycky, Richard P., Newton, MA, UNITED STATES
Edwards, David A., Boston, MA, UNITED STATES

PATENT ASSIGNEE(S): Advanced Inhalation Research, Inc., Cambridge, MA,
UNITED STATES (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|---|------|---------------|
| PATENT INFORMATION: | US 2003125236 | A1 | 20030703 |
| APPLICATION INFO.: | US 2002-179463 | A1 | 20020624 (10) |
| RELATED APPLN. INFO.: | Continuation-in-part of Ser. No. US 2001-888126, filed on 22 Jun 2001, PENDING Continuation-in-part of Ser. No. US 2000-752109, filed on 29 Dec 2000, ABANDONED | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133 | | |
| NUMBER OF CLAIMS: | 79 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 7 Drawing Page(s) | | |
| LINE COUNT: | 2328 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention generally relates to formulations having **particles** comprising phospholipids, bioactive agent and excipients and the pulmonary delivery thereof. Dry **powder** inhaled insulin formulations are disclosed. Improved formulations comprising DPPC, insulin and sodium citrate which are useful in the treatment of diabetes are disclosed. Also, the invention relates to a method of for the pulmonary delivery of a bioactive agent comprising administering to the respiratory tract of a patient in need of treatment, or diagnosis an effective amount of **particles** comprising a bioactive agent or any combination thereof in association, wherein release of the agent from the administered **particles** occurs in a rapid fashion.

L4 ANSWER 4 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2003:172669 USPATFULL

TITLE: **Particles** for inhalation having sustained release properties

INVENTOR(S): Basu, Sujit K., Cambridge, MA, UNITED STATES
Hrkach, Jeffrey, Cambridge, MA, UNITED STATES
Lipp, Michael, Framingham, MA, UNITED STATES
Elbert, Katharina, Cambridge, MA, UNITED STATES
Edwards, David A., Cambridge, MA, UNITED STATES

PATENT ASSIGNEE(S): Advanced Inhalation Research, Inc., Cambridge, MA (U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|-------|---------------|
| | ----- | ----- | ----- |
| PATENT INFORMATION: | US 2003118513 | A1 | 20030626 |
| APPLICATION INFO.: | US 2002-202616 | A1 | 20020723 (10) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 2000-752109, filed on 29 Dec 2000, ABANDONED | | |
| DOCUMENT TYPE: | Utility | | |
| FILE SEGMENT: | APPLICATION | | |
| LEGAL REPRESENTATIVE: | HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133 | | |
| NUMBER OF CLAIMS: | 47 | | |
| EXEMPLARY CLAIM: | 1 | | |
| NUMBER OF DRAWINGS: | 3 Drawing Page(s) | | |
| LINE COUNT: | 1745 | | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The invention generally relates to a method for pulmonary delivery of therapeutic, prophylactic and diagnostic agents to a patient wherein the agent is released in a sustained fashion, and to **particles** suitable for use in the method. In **particular**, the invention relates to a method for the pulmonary delivery of a therapeutic, prophylactic or diagnostic agent comprising administering to the respiratory tract of a patient in need of treatment, prophylaxis or diagnosis an effective amount of **particles** comprising a therapeutic, prophylactic or diagnostic agent or any combination thereof in association with a charged lipid, wherein the charged lipid has an overall net charge which is opposite to that of the agent upon association with the agent. Release of the agent from the administered **particles** occurs in a sustained fashion.

L4 ANSWER 5 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2003:172666 USPATFULL
 TITLE: Pulmonary administration of chemically modified insulin
 INVENTOR(S): Patton, John S., Los Altos, CA, UNITED STATES
 Kuo, Mei-Chang, Palo Alto, CA, UNITED STATES
 Harris, J. Milton, Huntsville, AL, UNITED STATES
 Leach, Chester, El Granada, CA, UNITED STATES
 Perkins, Kimberly, Belmont, CA, UNITED STATES
 Bueche, Blaine, Castro Valley, CA, UNITED STATES

| | NUMBER | KIND | DATE |
|---------------------|----------------|-------|---------------|
| | ----- | ----- | ----- |
| PATENT INFORMATION: | US 2003118510 | A1 | 20030626 |
| APPLICATION INFO.: | US 2002-154057 | A1 | 20020521 (10) |

| | NUMBER | DATE |
|-----------------------|---|---------------|
| | ----- | ----- |
| PRIORITY INFORMATION: | US 2001-292423P | 20010521 (60) |
| DOCUMENT TYPE: | Utility | |
| FILE SEGMENT: | APPLICATION | |
| LEGAL REPRESENTATIVE: | INHALE THERAPEUTIC SYSTEMS, INC, 150 INDUSTRIAL ROAD, SAN CARLOS, CA, 94070 | |
| NUMBER OF CLAIMS: | 77 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 14 Drawing Page(s) | |
| LINE COUNT: | 2552 | |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides active, hydrophilic polymer-modified derivatives of insulin. The insulin derivatives of the invention are, in one aspect, suitable for delivery to the lung and exhibit pharmacokinetic and/or pharmacodynamic properties that are significantly improved over native insulin.

L4 ANSWER 6 OF 21 USPATFULL on STN

ACCESSION NUMBER: 2003:99173 USPATFULL
TITLE: **Particles** for inhalation having sustained release properties
INVENTOR(S): Vanbever, Rita, Brussels, BELGIUM
Langer, Robert S., Newton, MA, UNITED STATES
Edwards, David A., Boston, MA, UNITED STATES
Mintzes, Jeffrey, Brighton, MA, UNITED STATES
Wang, Jue, Clifton, NJ, UNITED STATES
Chen, Donghao, Lexington, MA, UNITED STATES
PATENT ASSIGNEE(S): Massachusetts Institute of Technology, Cambridge, MA, UNITED STATES (non-U.S. corporation)

| | NUMBER | KIND | DATE |
|-----------------------|--|------|---------------|
| PATENT INFORMATION: | US 2003068277 | A1 | 20030410 |
| APPLICATION INFO.: | US 2002-94955 | A1 | 20020307 (10) |
| RELATED APPLN. INFO.: | Continuation of Ser. No. US 2001-909145, filed on 19 Jul 2001, ABANDONED Continuation-in-part of Ser. No. US 1999-394233, filed on 13 Sep 1999, PENDING Continuation-in-part of Ser. No. US 1997-971791, filed on 17 Nov 1997, GRANTED, Pat. No. US 5985309 | | |

| | NUMBER | DATE |
|--|--|---------------|
| PRIORITY INFORMATION: | US 1997-59004P | 19970915 (60) |
| DOCUMENT TYPE: | Utility APPLICATION | |
| FILE SEGMENT: | HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133 | |
| LEGAL REPRESENTATIVE: | | |
| NUMBER OF CLAIMS: | 51 | |
| EXEMPLARY CLAIM: | 1 | |
| NUMBER OF DRAWINGS: | 2 Drawing Page(s) | |
| LINE COUNT: | 1469 | |
| CAS INDEXING IS AVAILABLE FOR THIS PATENT. | | |

AB The invention generally relates to a method for pulmonary delivery of therapeutic, prophylactic and diagnostic agents to a patient wherein the agent is released in a sustained fashion, and to **particles** suitable for use in the method. In **particular**, the invention relates to a method for the pulmonary delivery of a therapeutic, prophylactic or diagnostic agent comprising administering to the respiratory tract of a patient in need of treatment, prophylaxis or diagnosis an effective amount of **particles** comprising a polycationic complexing agent which is complexed with a therapeutic, prophylactic or diagnostic agent or any combination thereof having a charge capable of complexing with the polycationic complexing agent upon association with the bioactive agent. The **particles** can further comprise a pharmaceutically acceptable carrier. The amount of polycationic complexing agent present in the **particles** is an amount sufficient to sustain the release of diagnostic, therapeutic or prophylactic agent from the **particles**. For example, the amount of complexing agent present can be at about 5% weight/weight (w/w) or more of the total weight of the complexing agent and therapeutic, diagnostic or prophylactic agent. Release of the agent from the administered **particles** occurs in a sustained fashion.

L4 ANSWER 7 OF 21 USPATFULL on STN
ACCESSION NUMBER: 2003:78040 USPATFULL
TITLE: **Powder** formulation
INVENTOR(S): Heijerman, Hendrikus Gerardus M., Zoetermeer, NETHERLANDS
Le Brun, Petrus Paulus H., The Hague, NETHERLANDS
Frijlink, Henderik Willem, Eelde, NETHERLANDS
de Boer, Anne Haaije, Drachten, NETHERLANDS
PATENT ASSIGNEE(S): Rijksuniversiteit Groningen, Groningen, NETHERLANDS